RPM PLUS MOLDOVA TRIP REPORT

BRIEF ASSESSMENT OF TUBERCULOSIS DRUG PROCUREMENT IN MOLDOVA JANUARY 25–FEBRUARY 2, 2002

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Executive Summary

This report presents the results from a rapid mostly qualitative tuberculosis (TB) procurement assessment conducted in Moldova by the Management Sciences for Health (MSH) Rational Pharmaceutical Management Plus (RPM Plus) program during 25 January - 2 February 2002. The objective of this assessment was to review Moldovan tuberculosis drug policies and procurement procedures, conduct a brief market survey and review existing procurement practices and drug quality assurance mechanisms.

All of the key issues listed below are increasingly important especially given that the DOTS strategy is becoming more widely used. In 2001 the number of new TB patients increased by 33%. The introduction and expansion of DOTS, better diagnostic practices, and improved availability of treatment with first-line TB drugs through GDF assistance and MoH central procurement most likely all contributed significantly to this increase. This rise in new case notification is likely to continue for the next year or two.

In addition TB drug resistance is a growing concern. It is estimated that approximately 40% of patients in Moldova have developed some degree of resistance to TB drugs which means that very soon the availability of and access to second line treatment will be an even more important issue. The cost of drugs for second line treatment is thousands of times more expensive than those drugs used in first line treatment. One recommended way for countries to access affordable second line drugs is through the WHO's Green Light Committee, which requires that applying countries have sound drug management practices in place.

The RPM Plus team sought to identify gaps in the Moldovan TB drug procurement and supply management systems, assess the country's training and technical assistance needs and develop a program of interventions to strengthen drug management procedures.

Key Findings

Key findings of the TB drug assessment are summarized below for each of the critical areas of a functioning drug management system:

Policy and Legal Framework

1. The Moldovan Government states that essential health services and drugs are available free of charge; in practice this is not guaranteed

2. The NTP lacks authority and capacity to re-allocate TB drugs between health facilities of different judets. This leads to oversupply of TB drugs in some areas and shortages in others

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3. There is a lack of coordination between all players in the TB procurement process

Drug Financing

4. The current financial mechanisms lead to inequity in drug availability among regions

5. Irregular financing results in long lead times for MoH tenders

6. Lack of funds to treat MDR TB leads to sub-therapeutic treatment and an increase in MDR TB cases

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7. 2001 prices obtained through the MoH procurement of TB drugs were optimal when compared with median international prices, however better prices should be possible for local hospital procurements

8. Purchasers other than the MoH (hospitals, MoJ for inpatient population) are unable to take advantage of the low prices obtained through the MoH tender

9. Imported TB drugs procured through MoH tender are cheaper than locally manufactured drugs

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Drug Selection

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13. Estimates from the National Institute of Pharmacy put smuggled drugs at about 50% of the drugs market in Moldova. There is no information on what percentage, if any, of these drugs is promoted to treat tuberculosis

14. There is capacity and expertise at the National Institute of Pharmacy to serve as a coordinating body in drug management issues, and be a guardian of drug quality; however, the MoH does not seem to plan using this capacity

15. The NTP does not have a pharmacist available to conduct random checks on drug availability and service quality at the local level

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16. Sufficient competition exists for first line TB drugs, as reflected in reasonable prices

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Drug Procurement Practices for TB Drugs

17. Moldova does not have established procedures for competitive procurement of public commodities, including the necessary legal basis, administrative and management support, and pharmaceutical expertise. Responsibility for TB drug procurement is shared between numerous players

18. There is room for improvement of tender documents, in particular with regards to drug specifications

Drug Distribution

Distribution Process

19. The TB drug distribution mechanisms differ by funding source, and do not serve the needs of the national TB control program

Inventory Control: Distribution and Consumption Data

20. Drug ledgers are not harmonized – they differ from TB dispensary to TB dispensary making prescription, consumption and inventory data difficult to track

Drug Availability

21. In three WHO DOTS pilot sites, all first line TB drugs are presently available through GDF support

22. In non-DOTS sites since late 2001, TB drugs have also been available via MOH central procurement and distribution for outpatients (continuation phase)

23. There are dramatic interruptions in TB drug supply in some TB facilities in the north of the country due to the inability of local administrations to provide funds for treatment of hospital patients

Drug Use

21. There is no evidence available on whether TB drugs are being used appropriately in non-DOTS pilots

22. Poor availability of second line drugs to treat resistant strains has revealed anecdotes of alarming prescribing practices

GDF Drugs

23. The GDF drugs for the three pilot sites were delivered in two shipments in November 2001. There were no problems with customs clearance and storage

24. The GDF drugs however were short-packaged by the supplier

25. The water for injection did not pass quality tests as several plastic ampoules were leaking

26. GDF drugs in general are stored, distributed, and used properly; however, lack of unified forms to control stock and consumption complicates control by the NTP

27. Physicians in TB facilities experience problems of repacking the GDF drugs; repacking is time-consuming, and requires additional investments for bottles or boxes which the NTP can not afford

28. With increased responsibility for TB drug distribution and monitoring, the NTP will need a pharmacist on staff

Key Recommendations

Key recommendations of the tuberculosis drug procurement assessment in Moldova are summarized below for each of the assessment areas:

Policy and Legal Framework

1. The Government should establish mechanisms to guarantee funding of the declared free of charge minimum package of health services including the pharmaceutical component

2. A financial compensation mechanism and a distribution plan should be elaborated through which the NTP can redistribute tuberculosis drugs from judet to judet

Management Support

3. One body should be responsible for the funding and procuring of drugs for a full course of tuberculosis treatment (both inpatient and ambulatory care). Options on how this might be done in practice need to be explored

Drug Financing

4. Explore options for merging streams of financing for TB drugs and/or possibility of other organizations procuring at competitive prices established through MoH bids

5. With DOTS expansion GDF drugs should become increasingly available throughout the country. Moldova should begin to elaborate a plan for building up the capacity and infrastructure necessary to procure quality TB drugs competitively for when it can no longer rely on GDF drug supplies

Drug Prices

6. By harmonizing procurement of TB drugs under one body better prices could be obtained than those presently obtained by local procurements

Drug Selection

7. The NPA should consult the NTP/and advisory TB group with all drug lists purchased with MoH or local administration resources to ensure that the drug specifications correspond to the national requirements (for example, verify that TB drugs procured meet standard criteria and that tenders are advertised by generic rather than by brand name).

Drug Registration

8. Drug registration procedures should be made more transparent and information on products should be readily available

Drug Quality Control

9. Mechanisms should be established to evaluate treatment outcomes in relation to drugs used. Stricter quality assurance measures (supplier performance monitoring, drug problem reporting mechanisms, etc.) should be implemented

10. To strengthen the quality of tuberculosis drug procurement, an advisory group (preferably within the National Institute of Pharmacy) should be established

11. Periodic random checks on tuberculosis drug availability and health service quality at local level should be conducted

Drug Procurement

12. There should be increased transparency in the TB drug procurement process

13. Tender documents should be improved in particular as regards drug specifications

14. The GMP requirement should be explicit and non-waivable

Drug Distribution

Drug Distribution Process

15. TB drugs should no longer be distributed to patients via pharmacies, but rather through TB dispensaries and family doctors/nurses

Drug Inventory Control: Distribution and Consumption Data

16. Unified forms to track prescription, consumption and drug inventory data need to be developed and automated to simplify collection and comparison

Drug Availability

17. Prior to development of a parallel drug distribution system a serious feasibility study should be undertaken and options for contracting the existing private pharmacy network should be considered

Drug Use

18. A study of drug prescription and use patterns should be undertaken

GDF Drugs

19. Moldova should assure that the appropriate steps (applications/monitoring etc.) are planned and carried out in time to take advantage of GDF drugs for all DOTS areas

Acronyms

BASAFARM	drug wholesaler in Moldova (ex-CMS)
CMS	central medical store
DMIS	drug management information system
DOT	directly observed therapy
DOTS	directly observed therapy short-course (brand name for the WHO TB Control Strategy)
DUR	drug utilization review
FARMACO	Moldovan drug manufacturer
FDC	fixed drug combination
FIFO	first in first out (drug policy)
GDF	Global Drug Facility
GMP	good manufacturing practice
INH	isoniazid
INN	international nonproprietary name
MCH	maternal and child health
MDRTB	multi-drug resistant tuberculosis
MoF	Ministry of Finance
MoH	Ministry of Health
MoJ	Ministry of Justice
MSH	Management Sciences for Heath
NIP	National Institute of Pharmacy
NIS	Newly-Independent States
NPA	National Procurement Agency
NTP	national tuberculosis program
OTCs	over the counter (drugs)
PICs	Pharmaceutical Inspection Commission
RIF	rifampicin
RPM Plus	USAID funded Rational Pharmaceutical Management Plus Program
TB	tuberculosis
TLC	thin layer chromatography
USAID	United States Agency for International Development
WHO	World Health Organization
VAT	value added tax

Background

In 2001, there were 3820 tuberculosis cases in Moldova. Of these 3820 cases, 402 were chronic and 1368 were new smear positive cases diagnosed by passive case finding. The total number of smear positive cases during 2001 was 2830. Tuberculosis incidence rose 33.4% from 2000 to 89.4/100,000 in 2001, which is almost double the incidence rate for 1990. The mortality rate was 15.6/100,000 in 2001, which is slightly less than in 2000. However, according to National TB Institute, fewer autopsies were carried out in Moldova in 2001 as compared to previous years and, as a result, the cause of death is often unknown. Many deaths due to tuberculosis may therefore not be captured by mortality figures.

Moldova has 1900 tuberculosis beds, seven TB hospitals and one children's sanatorium. There are two more hospitals and one sanatorium in TransDnestr.

All TB case finding is passive. There is no active screening of possible patients, even of families of infected individuals.

Drug resistant strains of tuberculosis are becoming an increasing problem in Moldova. It is estimated that almost 40% of patients have developed resistance to at least one of the five main first line drugs. Laboratory resources, reagents and supplies to confirm resistance are in scarce supply; for example, the TB Institute has only managed to confirm 40% of suspected MDRTB cases.

Different organizations are responsible for procuring TB drugs depending on treatment stage: the MoH procures TB drugs centrally for ambulatory patients while the local administrations put aside financial resources for hospital drug procurement. Thus, when the patient is an inpatient, drug needs are covered by hospitals (local administration funds) and, once the patient begins the continuous phase of tuberculosis treatment, MoH funds are used to provide drugs at ambulatory level. MoH and local drug procurement are carried out independently although both processes pass through the National Procurement Agency (NPA) (although some hospital procurements are direct purchases from local suppliers).

Separate tenders for the MoH and hospitals translate into different suppliers being contracted at different prices, suggesting that optimal prices are not being obtained. Almost certainly optimal prices are not being obtained through direct local purchasing. More importantly, divided responsibility for drug procurement has often in the past meant gaps in availability and subsequent treatment interruption, increased drug resistance and death.

DOTS was implemented in three pilot[1] districts (the municipality of Chisinau and the districts of Orhei and Lapusna) in November 2001. These three districts cover approximately a third of Moldovan tuberculosis patients. In 2001, there was an increase of 33% in the number of TB patients in these three areas; the introduction of DOTS along with the sudden availability of drugs most likely contributed significantly to this increase.

[1] A summary of visits to site visits (both DOTS pilots and non-DOTS pilots) is provided in Annex 1.

The NTP intends to extend DOTS to three regions per quarter in 2002 (beginning in April/May 2002). If all goes according to schedule, this will mean that DOTS will cover the entire country (except for the TransDnestr region) by the end of 2002. Increased DOTS coverage alongside sustained drug availability should translate initially into a higher tuberculosis incidence rate as more people come forward for detection and treatment. This should in turn lead to a rapid decline in mortality rates from TB.

In 2001, Moldova applied and was accepted to become one of the first country recipients of Global Drug Facility (GDF) drugs. The first shipment of tuberculosis drugs from the GDF arrived in Moldova in November 2001. At approximately the same time, the MoH procurement of drugs for tuberculosis treatment of outpatients came through. As a result, in some cases, hospitals and TB dispensaries have found themselves going from a "no drugs" situation up to late 2001 to a situation where there have more drugs to treat tuberculosis than are required. As legal restrictions inhibit redistribution of drugs to other judets, it is possible that wastage may occur.

The NTP expects that the quantities of TB drugs made available through the GDF will be enough to cover all DOTS areas for the next three years and maybe more. The GDF Secretariat has confirmed that if Moldova continues to meet GDF requirements and resources continue to be available, support can be extended to DOTS areas as the expansion plan is implemented.

To provide guidance on improving TB drug procurement, the Moldovan Government requested assistance from USAID in the form of a brief assessment of the present TB drug procurement situation. As a first step, an RPM Plus team conducted a rapid, mostly-qualitative review of the TB drug situation in Moldova from January 25-February 2 2002. The review was primarily based upon interviews with senior officials in the MoH, NPA, and NIP in Chisinau. Team members also conducted field visits to MoH-identified TB facilities (hospitals and dispensaries) in Orhei and Belti.

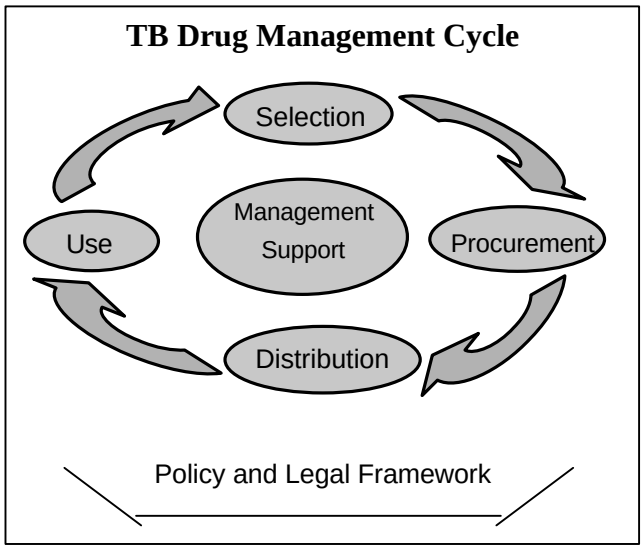
The following report summarizes the RPM Plus team's findings, primary concerns and suggestions for next steps in both the immediate and medium/long term for procurement of tuberculosis drugs in Moldova.

Drug Management Cycle

Tuberculosis can be successfully treated with cost-effective essential, or first-line, TB drugs prescribed and administered in accordance with accepted international treatment standards. It is absolutely crucial, though, that those drugs are consistently available to patients in the proper dosage forms during the full course of treatment. Because TB treatment courses are lengthy, sometimes up to 8 months or more, any flaw in the TB drug management system may lead to treatment failures and result in an increase in resistant TB strains.

The objective of the brief TB drug procurement assessment in Moldova was to analyze the entire cycle of activities that encompass drug management. The assessment team sought to identify existing gaps and shortcomings and recommend improvements for ensuring an uninterrupted drug supply for TB drugs.

The team reviewed the four basic functions of the drug management cycle, pictured at right: **selection, procurement, distribution,** and **use** with a focus on the procurement component. At the center of drug management cycle is a core of **management support** systems, including *organization, financing and sustainability, information management, and human resources management*. The entire cycle rests on a **policy and legal framework** that establishes and supports the public commitment to essential drug supply[2].



The drug management cycle is truly a cycle: each major function builds on the previous function and leads logically to the next. Selection should be based on appropriate treatment guidelines and drug needs for treatment of TB; procurement requirements should follow from selection decisions, and so forth. Costs rise, shortages become common, and patients suffer when the different tasks are not performed as part of a system but instead independently and disjointedly.

The RPM Plus survey methodology consisted of collecting quantitative data as possible given the short time frame of the visit, reviewing drug policy, registration, finance and use documents, and interviewing key informants from the MoH, MoF, NIP and NPA at national level.

[2] Management Sciences for Health and the World Health Organization. *Managing Drug Supply: The Selection, procurement, Distribution, and Use of Pharmaceuticals.* Second edition, revised and expanded. W.Hartford, CT: Kumarian Press, 1997

Key Findings

Policy and Legal Framework

Policy and Legal Framework

- **The Moldovan government states that essential health services and drugs are available free of charge; in practice this is not guaranteed**

There are two major documents that describe government responsibilities in combating tuberculosis. These documents are the Law "On Minimum Free-of-Charge Medical Services Guaranteed by the State" (1999), and Order No. 180 of the MoH (August 10, 2001) "On Implementation of the National Program of Tuberculosis Control in the Republic of Moldova for the years 2001-2005".

According to these documents, all essential health services and drugs, including diagnosis and treatment of tuberculosis are provided free of charge in Moldova. In practice however, as part of past decentralization efforts, partial funding responsibility now lies with local (judet) governments that oftentimes do not have the means to provide the resources necessary. In the past therefore treatment has often been neglected due to a lack of government and/or individual resources.

Representatives of several bodies within the health sector from the central MoH to staff in TB dispensaries, the NIP and the municipality government voiced the desire that it be made explicit which services and drugs are guaranteed free of charge coverage by government.

- **The NTP lacks authority and capacity to reallocate TB drugs between health facilities of different judets. This leads to oversupply of TB drugs in some areas and shortages in others**

There are several factors which complicate the under equipped (one coordinator) NTP's ability to reallocate centrally procured or donated TB drugs where possible to ensure availability and avoid wastage due to early expiration. These include: recent changes in the country's administrative division[3], the resulting changes in responsibilities for patients at the local level (sector, rayon), closure of one of DOTS pilot hospital (Orhei judet), changes in TB patient categorization approaches and resulting drug need quantification errors, and poorly coordinated donor support.

In addition, legally it is not possible for the NTP to reallocate drugs procured with local funds from one local jurisdiction to another because drugs for hospitals are procured with local funds. Likewise, the NTP does not have the right to reallocate TB drugs procured for outpatients via the MoH central procurement mechanism. These matters will become increasingly important given that the National TB Program (NTP) is planning DOTS expansion throughout the country.

[3] According to 1998 reform, Moldova was subdivided into 14 judets (states), each comprised of 2-4 sectors (counties). Each judet had its own Health Administration and Central hospital. The new government elected in 2001 returned the country to pre-reform subdivision into 32 individual rayons.

This situation may change if the MoH takes entire responsibility for centralized drug supply for government programs as outlined in the Law "On Minimum Free-of-Charge Medical Services Guaranteed by the State" (1999). All drugs will be then coming from one source. It is advisable that in this situation the authority to control distribution and drug re-allocation if necessary be delegated to the NTP. This will also require enhancing the NTP capacity by putting a pharmacist on staff.

Management Support

Coordination between players in the TB procurement process

- **There is a lack of coordination between players in the TB procurement process**

As will be described in detail below, the MoH provides funds for ambulatory care tuberculosis drug treatment while local administrations make funds available to hospitals to procure TB drugs required to treat inpatients. This division in procurement responsibility has resulted in gaps in availability and drugs being used at care levels in which they are not supposed to be used.

Drug Financing

- **The current financial mechanisms lead to inequity in drug availability among regions**

Drugs for the treatment of tuberculosis have traditionally been procured through two separate financing streams: the MoH funds the TB drugs that are used for ambulatory treatment while hospitals use local administration funds to directly procure the drugs used in inpatient treatment. The result in the past has often been gaps in drug availability, especially at inpatient level. Many players (NTP, TB Institute, Municipal government among others) recognize the need to collate funds so that resources for an entire course of treatment are made available through one funding source, however no proposals have yet been put forward to support this change.

The total amount spent on drugs in Moldova for 2001 is unclear. Estimates show that the MoH tender for 2001 TB drugs was for 3 million lei (~230,000 US$) while local administrations procured a value of approximately 556,000 lei (roughly 43,000 US$) worth of TB drugs. In addition in 2001 at least 492,000 lei (~ 38,000 US$) worth of TB drugs were donated to Moldova (these figures include the drugs for the three DOTS pilot areas). The size of TB drug donations from various sources most likely is considerably higher as a lot of donated drugs are not reported to the NTP. These figures, for example, do not include prison data (TB patients in prisons are supported by funding from Caritas Luxembourg and fall under the responsibility of the Ministry of Justice rather than the Ministry of Health).

In 2002, the NTP requested a much smaller amount of drugs (approximately US$ 43,000) since supplies from 2001 procurements are still abundant. Resources for 2002 are to be used only for INH and Ethambutol.

There has always existed a gap between the requested and actually disbursed budget for TB drug procurement. The table below illustrates the trend during the last 5 years:

Table 1:
Percentage of TB Drug Need by Value Covered by the MoH Central Budget or Donations

Year	Percentage of Drug Need
1997	38%
1998	10%
1999	7%
2000	11%
2001	36% 54% with GDF drugs included

The NTP reported significant inequity in TB drug supply between regions. For example, the city of Chisinau in 2001 was able to procure TB drugs with its own funds in addition to drugs received from the MoH for outpatient treatment and the GDF drugs and is currently overstocked with TB drugs. On the other hand, several judets, especially in the northern part of Moldova (Lipkany and Varniceny) failed to allocate funds for TB drug procurement and as a result experience severe shortages.

- **Irregular financing results in long lead times for MoH tenders**

The procurement process (for all drugs not only TB) has traditionally been subject to delays, which are due to the fact that the NPA begins the tendering process when the budget is approved but not yet disbursed and the budget approval process is often significantly delayed. For example, the 2001 MOH drug tender planned to for February 2001, was actually conducted in April, while drugs started to arrive to facilities only in August with the main bulk arriving as late as November 2001.

Uncertainty about centralized procurement was the reason why the Chisinau city health administration procured its own TB drugs directly from a state-owned supplier, BasaFarm.

Late disbursements also often mean debts are incurred by TB facilities and judets health administration to TB drug suppliers. The TB Institute hospital, which is financed directly by the MOH for example, still owes 148,000 lei (~11,400 US$) for the 2001 TB drugs due to late resource disbursement.

- **Lack of funds to treat MDR TB leads to sub-therapeutic treatment and an increase in MDR TB cases**

According to the National TB Institute, approximately 40% of new cases are resistant to at least one drug, and 25% of them are resistant to two drugs. Such high rates of resistance may be attributed to poor availability of TB drugs and interruptions in treatment in previous years due to lack of financing for drug procurement. Resistant cases are treated at the National TB Institute hospital.

Because the funding situation has improved little during the past years, there is danger that resistance to second-line treatment will develop very quickly since the TB Institute hospital can

now afford a limited supply of second-line drugs, and treatment courses are sub-therapeutic. For example, a patient may receive a week-long course with cephalosporines just to keep him alive.

It is advisable that the NTP seek help from the Green Light Committee (GLC) to obtain second-line drugs. If the NTP DOTS expansion plan is implemented as planned by end of 2002, Moldova will be eligible for GLC assistance to directly procure second-line drugs.

Drug Prices

- **2001 prices obtained through the MoH procurement of TB drugs were optimal when compared with median international prices, however better prices should be possible for local hospital procurements**

- **Purchasers other than the MoH (hospitals, MoJ for inpatient population) are unable to take advantage of the low prices obtained through the MoH tender**

Optimal drug prices are not being obtained for the country as a whole as TB drugs are purchased through several tenders (MoH and local administrations) and at times through direct purchase (hospitals). GDF drugs are now available free of charge in the three DOTS pilot regions. A short-term option to reduce prices may be to purchase directly from the GDF at GDF prices for non-DOTS areas.

However the prices obtained through MoH procurement of tuberculosis drugs were optimal in 2001. The MoH centralized procurement has resulted in an average annual price drop of 5-7% since 1999 when centralized procurement for TB drugs began. The initial tender resulted in a price drop of over 30% from prices previously obtained through direct purchasing.

Local purchasing however is sometimes done through direct purchasing and is unlikely to result in optimal prices because of small amounts, distances, transport, fixing of prices, and poor negotiating skills. This lends strength to the argument that the MoH seek to cover both phases of treatment (inpatient and continuation phases). If the system stays unchanged at a minimum, the MoH should ensure that local administrations and other bodies such as the MoJ could purchase tuberculosis drugs from the contracted suppliers at the favorable prices given to the MoH.

- **Imported TB drugs procured through MoH tender are cheaper than locally manufactured drugs**

Moldova manufactures isoniazid and rifampicin domestically, but it appears that the local manufacturer does not comply with GMP standards, as was reported to the team by the Institute of Pharmacy. In addition, the prices offered by this local manufacturer are significantly higher than wholesale prices of imported GMP-compliant TB drugs (e.g. from Germany or Holland), and are not competitive even with a 10% domestic preference margin offered by the MoH. For example, in 2001 local prices were higher e.g. INH 300 is 135%, RIF 300 is 118%, Z 500 is 103% and E 100 is 113% of the winner's price.

Drug Selection

Drug Selection

- **There is concern that TB drug selection is experiencing pressure from industry and interest groups**

Selection of TB drugs in settings where DOTS is being implemented should not be problematic in theory as all required drugs and dosage forms are listed in the DOTS standard treatment regimens. It is quite common, however, for countries that do not have specially defined and enforced procedures of dealing with industry representatives to oftentimes experience pressure to select and procure products from specific companies.

In Moldova, in 2001 a three drug non-DOTS FDC was included on the tender list following pressure from a manufacturer representative. The list with this drug passed the NPA, and was stopped by the National Institute of Pharmacy because the drug was not registered at that time. It can be assumed that the drug product would have been purchased had it been registered then.

Experience of other countries should be taken into account. For its DOTS expansion program Kazakhstan, for example, in 1999 procured a large amount of a three-drug FDC that was not compliant with DOTS standards despite the manufacturer's claims that it was. The FDC did not fit DOTS regimens, and by the end of 2001, Kazakhstan had to deal with an expiring stock of the unused FDC.

It is thus highly recommended that the MoH approve the DOTS compliant list of TB drug products for procurement, and not allow other products to be entered on the list even if they are registered in the country.

There should also be a policy in place requiring the use of generic (or international nonproprietary, INN) names for selection purposes. It was noted by the survey team that brand names sometimes find their way onto tender lists, thus restricting competition, especially at the regional level (hospitals and regional health authorities).

Drug Registration

- **Registration for domestic or NIS drug manufacturers and suppliers does not require that international quality standards are met**

The National Institute of Pharmacy (NIP), a public body under the responsibility of the MoH, is responsible for drug registration. Financing for the NIP is primarily from fees paid for drug registration and quality control checks. Supplemental funding comes from the government budget. The NIP employs 120 staff.

The NIP was established in 1996, while the quality control laboratory responsible for testing during registration has functioned since 1993.

All five first line (including a 2-drug FDC) TB drugs are registered in Moldova. Requirements for registration are listed below in the drug quality control section.

Registration of a drug product costs 600 US$ to a foreign company, 300 US$ to a NIS supplier/manufacturer, and approximately 108 US$ to Moldovan companies. By law registration can take up to six months, however in practice it usually takes two to three.

In 1997, the first drug register (State Nomenclature of Drugs) was published. This register lists all drugs registered by brand name (rather than generic) and by country and manufacturer. The drug register also exists in electronic form and subscribers get monthly updates on drug recalls and new drugs registered. The database that exists at the NIP however does not allow for extraction of drug information by generic name or by drug therapeutic category.

Drug Quality Control

- **TB drug quality may require a separate study as there is no evidence of effective drug quality assurance mechanisms in the country**

While no tuberculosis drug quality problems were reported to the RPM Plus team, this may be due to some extent to the fact that drugs have only recently become available in Moldova. For example, of MDRTB patients, only 40% have been confirmed through susceptibility testing. The other 60% may well also be MDRTB patients but treatment failure may also just as well be due to poor quality drugs. Systems need to be put into place to determine the root causes of treatment failure since there does not seem to be a regular system for reporting drug quality problems.

At present in Moldova there is one large central quality control laboratory and two very limited capacity laboratories in more rural areas of the country. These all fall under the responsibility of the NIP, which oversees all drug quality control and pharmacy inspection activities. According to the NIP these laboratories conduct random checks on GMP compliant drugs and test every batch of non-GMP drugs. In addition tests are randomly conducted on GDF drugs. However no quality data is easily accessible[4].

Quality control analysis is required by law to take a maximum of 21 days. The NIP claims that quality checks often take less time; however when several analyses are occurring simultaneously, the three-week delay is common.

In 2001, 1671 inspections of pharmacies, wholesalers and manufacturers were carried out. The NIP has 22 inspectors, including representatives in each judet. They are responsible for inspecting pharmacy and warehouse conditions to confirm that facilities comply with licensing requirements. In addition, inspectors check mark-ups to ensure they do not exceed the maximum allowed (15% for wholesalers and 25% for retail pharmacies). Inspectors also check for the presence of unlawful drugs. In 2001, five pharmacies were suspended and 36 pharmacies and

[4] According to the NIP an order to retrieve this data would require a few days work from two to three people.

warehouses had their licenses removed. The specific reasons for suspension and license removal are not known.

- **Estimates from the National Institute of Pharmacy put smuggled drugs at about 50% of the drugs market in Moldova. There is no information on what percentage, if any, of these drugs is promoted to treat tuberculosis**

While the NIP has not voiced any quality concerns specifically for TB drugs, NIP staff are concerned about smuggled drugs, which the NIP estimates to represent up to 50% of the drugs market in Moldova. This in itself should raise alarm bells. These drugs obviously are not registered and do not pass any sort of quality testing. It is unclear to what extent smuggled drugs may be available to purportedly treat tuberculosis.

The hope is that with drugs now increasingly available free of charge in TB facilities throughout the country patients will have no reason to purchase substandard quality TB products on the black market. This is a critical reason to assure that drug supply remains constant and quality measures are strengthened.

NIP staff hypothesized that the reason the MoH recently eased registration procedures making it possible for manufacturers from "reputable" countries to import drugs without a laboratory check was an attempt to counter smuggling. There is no evidence however that this measure had any impact on decreasing the number of smuggled drugs on the market in Moldova.

- **There is capacity and expertise at the National Institute of Pharmacy to serve as a coordinating body in drug management issues, and be a guardian of drug quality; however, the MoH does not seem to plan using this capacity**

There are currently no mechanisms in the drug supply system to ensure the quality of TB drugs: international drug quality standards like GMP, WHO-type certificates, or pharmacopeial standards are not enforced. In fact, they are "negotiable" for TB drugs coming from the NIS, Romania and Moldova.

Given limited human resources, it is highly unlikely that the MoH Procurement Unit would be able to take on the necessary additional responsibilities to strengthen quality assurance for tuberculosis (and other) drug procurement unless it were to grow considerably in size.

The alternative is for the NIP to undertake some/most of these tasks. In fact, in anticipation of the MoH request for assistance in drug procurement quality assurance the NIP has already established a group consisting of several physicians and pharmacists with expertise in drug quality issues.

Potential technical areas for this group's involvement include:

- Post-marketing research
- Drug utilization reviews
- Adverse drug reaction monitoring
- Supplier performance monitoring

- Random spot checks on drugs at facility level
- Development of prequalification criteria and prequalification of suppliers of TB drugs

In the end of the survey mission, the RPM Plus team was informed by the NIP that the MoH decided to call back its plans to involve the NIP in quality assurance process for centralized procurement without providing any reason.

- **The NTP does not have a pharmacist available to conduct random checks on drug availability and service quality at the local level**

The infrastructure of the NTP is weak with just one individual responsible for overseeing all components of the national TB strategy. As a result, random quality spot-checks are simply not feasible.

Drug Market in Moldova

- **Sufficient competition exists for first line TB drugs, as reflected in reasonable prices**

The TB drug market in Moldova is small with only one local manufacturer, FARMACO, which receives a domestic preference margin of 10%. However, it is believed that competition exists for TB drugs since there are 5 to 15 suppliers for each first-line drug.

Attempts however are understandably being made to promote the local industry. Bidding specifications can be used to counter pressure from questionable quality products. However, there is growing pressure from lobbying groups to purchase certain drugs. For example a four drug combination FDC manufactured in India was put on the tender list and actually submitted as a bid even though it had not been approved by the NTP or even registered in the country.

Finally, mention was made to the fact that a recent order from the Prime Minister's cabinet made clear that during the next TB drugs tender local products are to win no matter the price.

Drug Procurement

Drug Procurement Practices for TB Drugs

- **Moldova does have established procedures for competitive procurement of public commodities, including the necessary legal basis, administrative and management support, and pharmaceutical expertise. Responsibility for TB drug procurement is shared between numerous players**

As mentioned above, drugs for tuberculosis treatment are procured through two separate mechanisms: the MoH procures the TB drugs that are used for ambulatory treatment while hospitals directly procure the drugs used in inpatient treatment using local administration funds.

The MoH Pharmaceutical Department is responsible for document preparation for all MoH centralized drug procurement. In addition, its three member staff[5] is responsible for:

- Licensing of pharmaceutical activities within the country
- Control and distribution of humanitarian aid (drugs)
- Preparation of all normative and regulative documents pertaining to the pharmaceutical sector
- Pharmaceutical inspections

The Pharmaceutical Department has developed standard bidding documents generally based on the World Bank documents from 1997. These documents are not specific to pharmaceutical procurement and do not include drug quality standards like GMP, WHO-type certificates, or pharmacopeial standards among the standard requirements.

The majority of tender winners for TB drugs in Moldova, however, appear to be GMP compliant. It is therefore unclear why the GMP requirement is not explicit in tender documents.

By law, tenders are required for drugs purchases exceeding 45,000 lei (approximately US$ 3,500).

For MoH tenders, a tender commission chaired by the Minister of Health and Deputy Ministers approves tender documents and sends them on to the National Procurement Agency (or NPA, which reports to the Ministry of Finance). For specific tenders (such as tuberculosis) chief experts from specific medical specialties also partake in the commission. The specialty body in question provides drug needs; for example, a list of the required TB drugs with specifications is provided by the TB Institute. The NPA conducts and awards the tender and collects fees for tender documents. There are no doctors or nurses on the board of the NPA.

The process is similar for procurements done with local administration resources except that some small local procurements by individual hospitals are done through direct purchases. In addition, the MoH Procurement Unit does not verify the drugs the hospitals put out to tender. As a result, certain standards may not be met; for example, tenders may be put out listing brand rather than generic drugs.

The process for awarding both MoH and local tenders is not clear. While bidders need to meet several criteria, the process is not transparent and it appears that often the NPA is not making the final decision on to whom to award the bid, rather the purchasing body (MoH or hospital) decides this, which brings transparency into question. The NPA does not sign contacts with suppliers; instead the "beneficiaries" of drugs (hospitals) sign the contracts directly with suppliers.

Of the 42 tenders planned so far for 2002, 15 will be for drugs. Of these fifteen, four are MoH tenders and the rest are for local hospital tenders. The NPA has just recently received the TB tender documents for the MoH tender that is expected to take place sometime after 20th February.

[5] One staff member was previously trained at an RPM general procurement course (with emphasis on TB) in Kazakhstan.

The MoH uses marketing research information from BASAFARM prior to conducting a tender to assess the TB drug market in country. This represents a potential conflict of interest, as BASAFARM traditionally has been the primary winner of TB drug tenders. This marketing research is undertaken primarily to determine what an "acceptable" price for the required drugs is. If offers do not come close, the MoH thus chooses to re-tender the bid.

- **There is room for improvement of tender documents, in particular with regards to drug specifications**

The MOH-specific procurement procedures and standard bidding documents require revision to address the issue of prequalification of suppliers, and drug quality assurance.

The following should become standard bidding requirements:

- Specific pharmacopeial standards (currently no mention is made to which standards)
- Shelf life of at least 85% (currently 60% shelf life at time of bidding)
- GMP (currently if bidder is known and if the bidder is from the NIS, Romania or Moldova then GMP is waived)
- The WHO-type drug quality certificate
- Proof of registration in Moldova
- Registration in the country of manufacturer
- Batch quality certificate

As mentioned above the GMP requirement is oftentimes easily waived by the MOH. In addition, there has recently been some discussion about doing away with the GMP requirement altogether. Given that the majority of present tuberculosis drug suppliers appear to be GMP compliant, it is unclear why there is debate at all around whether the GMP requirement should be explicit in tender documents. Making it explicit should not significantly change the present tender conditions for TB drug procurement. Instead it will increase transparency.

There is also room for improvement of tender documents as regards supplier qualification criteria.

The MoH may also want to consider a possibility of procuring TB drugs via the GDF mechanism that is utilizing GDF suppliers and the GDF tender prices for TB drugs. In this way, both drug quality issues and low prices would addressed.

Drug Distribution

Distribution Process

- **The TB drug distribution mechanisms differ by funding source, and do not serve the needs of the national TB control program**

Information about MoH TB drug procurement and distribution, and distribution of drugs donated via the MoH is reported to the National TB Institute, and thus the NTP, as part of the Institute, becomes aware of these TB drugs. The Institute is also responsible for monitoring the use (consumption) of donated TB drugs, and reports to the Ministry of Finance and the Government commission on donations.

Distribution of TB drugs is done through several channels, depending on a funding source. TB drugs procured using local administration funds are delivered to judet hospitals and then are distributed to inpatients via floor stocks, or to outpatients (in Chisinau) via outpatient units (dispensaries) mainly by TB physicians, who also provide counseling along with dispensing.

TB drugs procured with MoH funds are delivered by the winner (who, for the past three years, has been BASAFARM) to central judet pharmacies for a 1% distribution fee. Outpatients fill their prescriptions at these judet pharmacies.

TB drugs thus are often dispensed to TB out-patients by pharmacists on a monthly basis rather than through TB dispensaries and family doctors/nurses. This complicates observation of treatment and control over compliance with treatment regimens.

GDF and other humanitarian drugs are stored free-of-charge within BASAFARM warehouses and local DOTS sites (in the case of GDF) come to pick up the drugs directly from there. The NTP knows how many tablets are still stored in BASAFARM and how many tablets have been distributed to each outpatient unit.

At the time of the survey the first cohort of patients in DOTS pilots was completing the intensive phase in hospitals. There were only four patients that were out of hospital, and undergoing the continuation phase of treatment.

It is expected that DOTS patients when they reach the continuation phase would report to a TB doctor at the nearest TB dispensary three times a week or weekly depending on their "reliability" and ease of access to the outpatient TB unit. Doctors will observe drug administration and be responsible for patient compliance with the regimen.

However, neither the TB Institute nor the NTP have full information on TB drugs procured and distributed with local funding. There is also no information on patients out of pocket expenditures and patient access to TB drugs.

Another important source of TB drugs that remains outside the country's TB control program are drug donations through the church. For example, there were anecdotal reports of TB drugs being distributed by church organizations in northern Moldova. Neither the MoH nor NTP were aware of what drugs were sent and of the volume of these donations.

Inventory Control

- **Drug ledgers are not harmonized – they differ from TB dispensary to TB dispensary making prescription, consumption and inventory data difficult to track**

There is no unified system in place for NTP or MoH to monitor TB drug consumption by facilities and patients; hospitals and health centers. Each of these units uses its own methods and forms (log books) to control stock and consumption. This data however is not routinely reported to the NTP or MoH.

In contrast the NTP, having responsibility for reporting utilization of humanitarian aid to the MoH and the government, does have information on the exact quantities of each GDF drug that was provided to each DOTS pilot site.

No information however is available on whether this consumption data reflects appropriate prescribing and dispensing behavior.

Drug Availability

- **In three WHO DOTS pilot sites all first line TB drugs are presently available through GDF support**

- **In non-DOTS since late 2001 TB drugs have also been available via MOH central procurement and distribution for outpatients (continuation phase)**

- **There are dramatic interruptions in TB drug supply in some TB facilities in the north of the country due to the inability of local administrations to provide funds for treatment of hospital patients**

As mentioned above, up until August 2001 the primary problem in tuberculosis control in Moldova was a chronic lack of drugs to treat the disease. Procurements by the MoH were significantly delayed and local administrations lacked the necessary resources to procure the drugs required. As a result, patients were expected to purchase drugs out of pocket and many were either going without treatment or were sporadically purchasing drugs when their personal situation allowed them to. Lack of treatment often meant death while interrupted treatment and monotherapy are two of the primary reasons for increased tuberculosis drug resistance in Moldova.

In late 2001, deliveries for first line drugs paid for by the MoH and the GDF came through almost simultaneously. As a result, all five first line drugs are presently available and in some cases there is oversupply (see description of Chisinau site visit in Annex 1). As a result, the MoH has restricted its first procurement for 2002 to INH and Ethambutol.

As mentioned previously, continuity of treatment for tuberculosis is poor as inpatient and outpatient drugs are provided by different sources:

- The MoH centralized TB drug procurement covers the needs of outpatients only (patients in continuation phase of treatment)

- TB drugs to treat inpatients are purchased by hospitals using funds that are made available by judet administrations; these funds are scarce, and oftentimes do not cover the TB drug needs

As a result of this dual system, the TB drug supply mechanism for inpatients (intensive phase) is often not adequate. According to the TB Institute, two out of the six existing TB hospitals in Moldova have serious problems with drug availability (Lipkany and Varniceny), and one hospital (Balti) has used MoH outpatient TB drug stock to cover its inpatient treatment needs.

At the same time, poor coordination between central and local authorities can also result in oversupply. For example, the lack of coordination between the MOH, local, and the GDF procurement efforts has resulted in the DOTS pilot in Chisinau being overstocked with TB drugs that came in from all three funding sources.

Drug Use

- **There is no evidence available on whether TB drugs are being used appropriately in non-DOTS pilots**

Because of the lack of a reporting and monitoring system in the "old", non-DOTS treatment strategy, there are anecdotal comments of poor adherence to treatment standards. It was beyond the scope of work of the survey team to analyze drug use patterns.

It was noticeable, however, that in DOTS sites, due to the existence and use of WHO prescription and monitoring forms, and due to rigid government requirements to monitoring use of humanitarian drugs the NTP has enough data to perform an analysis of prescription practices. Thus far, however, no such research has been carried out by the NTP due to its limited manpower.

- **Poor availability of second line drugs to treat resistant strains has revealed anecdotes of alarming prescribing practices**

Second line drugs are not easily available. Some fluoroquinolones and thioamides have been donated in the past however usually in insufficient quantities to assure treatment completion or in the absence of other second line drugs necessary to make the treatment effective. An enormous concern with regard to second line drugs and MDRTB was raised during the RPM Plus trip: TB authorities acknowledged that given small quantities of second line TB drugs, doctors would often provide patients with drugs for one week periods when drugs are available. Not only does this not further treatment of the individual in question, nor alleviate symptoms; moreover it leads directly to increased anti-tuberculosis drug resistance.

GDF Drugs

Although it was outside its scope of work, the RPM Plus team looked at the distribution of GDF drugs:

- **The GDF drugs for the three pilot sites were delivered in two shipments in November 2001. There were no problems with custom clearance and storage**

- **The GDF drugs however were short-packaged by the supplier**

- **The water for injection did not pass quality tests as plastic ampoules were leaking**

- **GDF drugs in general are stored, distributed, and used properly; however, lack of unified forms to control stock and consumption complicates control by the NTP**

- **Physicians in TB facilities experience problems with repacking the GDF drugs; repacking is time consuming, and requires additional investments for bottles or boxes which the NTP cannot afford**

- **With increased responsibility for TB drug distribution and monitoring the NTP will need a pharmacist on staff**

GDF drugs for the three pilot sites were delivered in two shipments in November 2001. BASAFARM was responsible for all customs clearance, storage, sampling, quality control and some distribution (in other cases representatives from DOTS judets pick up drugs from BASAFARM). The initial count upon receipt of drugs however was slightly less than ordered: for example, there were 2,000 tablets of pirazinamide less than the amount in the waybill; similarly, (2 bottles Z (2,000 tabs) short, 2 bottles (2,000 tabs) INH 300 and 4 bottles of combo INH-RIF (4,000 tabs) short and E (2,000 tabs). The only drug that arrived in the requested amount was streptomycin from SZ #2 from China.

In addition, the water for injection did not pass quality tests as plastic ampoules were leaking. The manufacturer was Vifor from Mumbai (Bombay) India. However, Moldova has no shortage of H2O for injection. The problem instead is how to dispose of it.

The first shipment from BASAFARM to DOTS pilots was done in November. An NTP estimate is that the next shipment will be required only in Summer 2002.

The GDF team recommendation to have labeling in Russian and Moldovan was not put into practice by suppliers.

Context for TB Drug Procurement: Health Sector Reform

The government of Moldova and the MoH are currently considering major health reforms aimed at improving access to better health services and essential drugs. The reforms will include establishing health insurance schemes and a parallel (government-owned) drug distribution network for MoH funded essential drugs. This may have significant long-term effects on the country's public health system, and may require international assistance.

National Health Insurance Scheme

The Moldovan government is currently considering establishing a National Health Insurance Scheme. This will require establishing a minimum package of services including lists of drugs (drug formularies) that are provided for free or for co-payment but which the government assures should be available at affordable prices or reimbursed by insurance.

Moldova has a National Formulary (initiated in 1998-1999). However, the country lacks standard procedures for revising the Formulary such as the procedure for adding and deleting drugs as required based on medical evidence and expert consensus. The absence of written procedures and adequate information support for the Formulary Committee may have significant negative effects on the success of a health insurance scheme because the formulary list will inevitably get inflated due to pressure from industry and suppliers and/or lack of skills to select drugs based on cost, safety, and efficacy. In Kazakhstan, for example, the medical insurance fund went bankrupt twice during the 1990s largely because selection and use of drugs was not streamlined.

Parallel Distribution System

Moldova is considering developing a parallel distribution system for essential drugs. This network would primarily benefit rural areas where drug availability has been grim. The government plans to utilize part of the World Bank loan for this purpose.

Some preliminary studies of the feasibility of such a parallel system were carried out by WHO/Euro in 2001. These studies recommended that the MoH conduct an in-depth analysis and first consider improvement of the current private distribution network.

Recommendations

Policy and Legal Framework

Policy and Legal Framework

- **The Government should establish mechanisms to guarantee funding of the declared free of charge minimal package of health services; including their pharmaceutical component**

The Government has established a minimum package of services. Resources should be set aside to guarantee that these services (including key health concerns such as infectious diseases, including tuberculosis) are covered and free drugs available.

This setting aside of resources should be followed by establishing working mechanisms for regular revision of the existing national formulary. Revision should be based on medical evidence, safety, and cost of pharmaceuticals.

It is also advisable to initiate activities to establish drugs and therapeutics committees (DTCs) in hospitals and primary health care units. These DTCs would have the responsibility for monitoring drug use.

- **A financial compensation mechanism should be elaborated through which the NTP can redistribute tuberculosis drugs from judet to judet**

Such a mechanism would allow for redistribution of TB drugs, hopefully diminishing oversupply in some areas while offsetting shortages in others.

Management Support

Coordination between players in the TB procurement process

- **One body should be responsible for the funding and procuring of drugs for a full course of tuberculosis treatment (both inpatient and ambulatory care). Options on how this might be done in practice need to be explored**

Options include exploring collating local funds earmarked to TB and pooling these centrally or identifying additional central level tuberculosis funds. An increase in drug supply coordination between inpatient and outpatient levels is expected to result in fewer gaps in availability and improved treatment completion.

Drug Financing

- **Explore options for merging streams of financing for TB drugs and/or possibility of other organizations procuring at competitive prices established through MoH bids**

- **With DOTS expansion GDF drugs should become increasingly available throughout the country. Moldova should begin to elaborate a plan for building up the capacity and infrastructure necessary to procure quality TB drugs competitively for when it can no longer rely on GDF drug supplies**

Key steps include determining a financing mechanism that would allow for one source to be responsible for procuring all TB drugs (for inpatient and outpatient stages of treatment), fixing an annual tender cycle that if possible coincides with the country's planning cycle, establishing and implementing tighter quality control mechanisms and training staff in competitive quality drug procurement.

Drug Prices

- **By harmonizing procurement of TB drugs under one body better prices could be obtained than those presently obtained by local procurements**

Prices obtained through MoH procurements are optimal when compared with median international prices. As a minimum, other procurements (hospitals, MoJ for inmate services) ought to be able to take advantage of these prices.

Drug Selection

Drug Selection

- **The NPA should consult the NTP/and advisory TB group with all drug lists purchased with MoH or local administration resources to endure that the drug specifications correspond to the national requirements (for example, verify that TB drugs procured meet standard criteria and that tenders are advertised by generic rather than by brand name)**

Drug Registration

- **Drug registration procedures should be made more transparent and information on products should be readily available**

Drug Quality Control

- **Mechanisms should be established to evaluate treatment outcomes in relation to drugs used. Stricter quality assurance measures (supplier performance monitoring, drug problem reporting mechanisms etc.) should be implemented**

Moldova needs to have a system in place for reporting and evaluating potential drug quality problems, not only for tuberculosis, but for all drugs.

- **To strengthen the quality of tuberculosis drug procurement, an advisory group (preferably within the National Institute of Pharmacy) should be established**

This group would have the responsibility for not only checking registration, drug needs and doing marketing surveys prior to tender but also for carrying out post-marketing research, drug utilization reviews, adverse drug reaction monitoring and supplier performance monitoring and random spot-checks on drugs at facility-level. The expert group should develop prequalification criteria and be responsible for prequalification of suppliers. This group should take on these responsibilities not only for TB but for all drugs.

- **Periodic random checks on tuberculosis drug availability and health service quality at local level should be conducted**

Ideally this would be the responsibility of the NTP. However given human resource constraints (the NTP is composed of one individual), the NIP could potentially assume these tasks.

Drug Procurement

- **There should be increased transparency in the TB drug procurement process**

It is strongly advisable that a criteria-based supplier prequalification process be established.

- **Tender documents should be improved, in particular as regards drug specifications**

Improved tender documents will help counter pressure from industry.

- **The GMP requirement should be explicit and non-waivable**

Given that the majority of present suppliers appear to be GMP compliant it is unclear why the GMP requirement is not explicit in tender documents. Making it explicit should not significantly change the present tender conditions for TB drug procurement. Instead it will increase transparency.

Drug Distribution

Drug Distribution Process

- **TB drugs should no longer be distributed to patients via pharmacies, but rather through TB dispensaries and family doctors/nurses**

This should increase DOT and treatment adherence. In addition, in this way, health professionals can more easily monitor the patient's health status and any possible drug side effects.

Inventory Control: Distribution and Consumption Data

- **Unified forms to track prescription, consumption and drug inventory data need to be developed and automated to simplify collection and comparison**

Donor funds should be sought to support these activities. There is capacity in country to develop the software required.

Drug Availability

- **Prior to development of a parallel drug distribution system a serious feasibility study should be undertaken and options for contracting the existing private pharmacy network considered**

Moldova has a pretty well developed private pharmacy network, and it may not be advisable to establish a parallel state-owned system. While it is true that access to drugs in remote rural areas is limited, development of incentive schemes for the private sector and contracting/outsourcing agreements could be a more cost-effective option than building a state distribution network from scratch. In any case, it is recommended that the MoH first conduct a serious feasibility study (with international assistance) to determine potential options to expand access to essential drugs in rural areas.

Drug Use

- **A study of drug prescription and use patterns should be undertaken**

From the drug management point of view, any work on development of service packages for insurance should begin with a study of drug use patterns (prescription and drug seeking behavior), followed by development of capacity within a health insurance body or within the MoH to conduct an ongoing drug utilization review (DUR) program at health facility level. Such programs would allow insurance to promote rational drug use and develop intervention packages to improve use and treatment outcomes in the most cost-effective way. Even in the absence of insurance these programs should be developed.

GDF Drugs

- **Moldova should assure that the appropriate steps (applications/monitoring etc.) are planned and carried out in time to take advantage of GDF drugs for all DOTS areas**

As previously mentioned Moldova has an ambitious DOTS expansion plan aiming to cover the entire country by the end of the year. STOP TB has confirmed that if the appropriate application procedures are followed the country should qualify for GDF support for all DOTS areas as expansion continues. There are also possibilities of receiving GDF drugs for a longer period than the initial three years. Moldova should monitor carefully what the requirements are to continue to take advantage of GDF drugs while strengthening in-country drug management capacity and infrastructure.

Annex 1: Summary of Site Visits (DOTS and non-DOTS)

DOTS Pilots: Chisinau and Orhei

Municipality of Chisinau
Visits were conducted to two of the five policlinics (both of which have laboratories) and the TB hospitals of Chisinau. Both policlinics have TB "cabinets" where ambulatory patients meet TB doctors and TB drugs are dispensed. The first DOTS cohort began in all five policlinics in November 2001.

Tuberculosis incidence in Chisinau was 103.8 in 2001. Chisinau's TB hospital had 350 beds up until January 1st; this numbers has since been reduced to 300. At the time of visit there were 309 patients. In addition there were ten patients on the waiting list.

Chisinau presently has tuberculosis drugs from three funding sources: MoH, local administration and GDF. Both GDF and MoH drugs arrived later than planned (MoH drugs were expected in June and GDF in July and arrived instead in August and November respectively). Due to chronic drug availability problems in the past, the city also used its own funds to purchase tuberculosis drugs through the NPA. The result is an over-abundance of TB drugs. This situation is frustrated by the inability of the NTP to redistribute these drugs to other judets due to legal restrictions.

Judets are presently composed of sectors[6]. Each administrative sector has a central pharmacy that stores and dispenses MoH TB drugs. However, TB managers do not like this system, as patients do not meet a physician or nurse when receiving medications. After collecting drug treatment patients are supposed to go to the dispensary for DOT, which often does not occur as it means additional time and effort for the patient. Drugs that are purchased using local resources however are kept at policlinic-dispensary level and distributed there. GDF drugs are also available at dispensary level. Family doctors are resistant to administering drugs in their districts, being unwilling to accept additional work without additional pay.

The TB dispensaries operate a FIFO policy. As there is no mechanism to re-allocate purchased drugs (to other judets etc.) staff aim to use drugs procured through city funding first (due to these having the soonest expiry dates).

All inventory tracking is manual. Standardized logbooks do not exist; each dispensary/unit uses its own tracking method depending on drug origin. While all methods are fine and track information adequately, lack of standardization is not logical for countrywide data collection and comparison.

Packaging is a concern given that bottles of 1000 tablets need to be divided and re-packaged and both expiry date and instructions need to be clear. Packing material is not available and so

[6] However the administrative breakdown of the country is expected to change soon. Judets will cease to exist and the local level unit will instead revert to being the rayon – which is roughly equivalent to present sectors.

patients are asked to bring their own. Repackaging by nurses and doctors also violates a MoH order, which specifies that only certified pharmacists should perform this activity.

The number of drugs distributed varies from patient to patient. Some patients receive weekly treatment and others come more frequently (those suspected of adherence problems) or less frequently (usually those living farther away or who travel frequently and are unable to come to the clinic regularly).

DOTS outpatients are just starting to come in on an ambulatory basis. They are still very few in number, approximately four.

Adherence is a huge problem. However some patients are trusted with a large amount of drugs and some extreme cases need to be brought in for treatment by the police. In 2001 of 90 cases those who defaulted for more than three months were six or seven cases.

Orhei Judet

The TB incidence rate for 2001 in Orhei was 81/100,000. Prior to late 2001 no drugs at all had been available for tuberculosis treatment for the previous three years. Increased drug availability has translated into an increase in TB cases since last 2001. However the government has opted to close the 70-bed TB hospital (and use it instead for psychiatric care), transporting intensive phase TB patients to the central TB hospital in Chisinau and to a TB hospital in a judet 40 km away. The primary concern resulting from the closure is that patients will not want to be hospitalized so far away from their families. Another key concern is that, although at present health authorities transport patients to treatment centers outside of Orhei, this is not expected to continue. If patients are expected to get to intensive phase treatment facilities on their own it is unlikely they will do so. Health authorities may still contest the hospital transfer. Another possible option under discussion is that intensive phase patients will be treated in a wing of the hospital in Orhei that will be converted from surgical care to TB care.

When patients complete the intensive treatment phase they are given instructions of where to go (and when) to continue the ambulatory phase of treatment. There is concern that patients can be easily lost at this transition treatment stage. So far however no evidence is available: as DOTS was only recently implemented there is only one ambulatory patient and one other has "disappeared" and thus discontinued treatment. Forty-eight patients are presently undergoing intensive phase treatment and thirteen are expected back from Chisinau very soon; thus it will be possible to monitor more carefully if there are problem in completing treatment regimens.

Non-DOTS Site Visit: Balti

The TB incidence rate for 2001 in Balti was 73.5/100,000. The Balti TB hospital has 110 beds, 30 more for children and 45 for other pulmonary diseases. At the time of visit there were 195 patients for 185 beds. The facility also offers outpatient treatment for tuberculosis.

It is interesting to note that the judet is slowly introducing the principles of DOTS even though it is not supposed to officially as of yet. The director is very enthusiastic about the strategy, which

is particularly encouraging given her past skepticism. Training of TB doctors has begun, as has smear microscopy. It is hoped that full-scale DOTS implementation will begin in March 2002.

Prior to August 2001 patients has to pay themselves out of pocket for any required drugs to treat TB. Since August 2001 MoH-procured drugs have been available in Balti facilities. Since this tie the 60% occupancy rate has risen to 100%. In some cases where local funds have not been available to procure the required drugs needed to treat the inpatient phase, facilities at times have used MoH drugs instead (which are meant to be used solely for ambulatory care).